

Work Order ID 50803

July 22, 2009 2:56:53 PM

Page 1

Item ID: D212-664-207

Accept

Revision ID: A

Item Name: Crosstube Low Standard Aft

Start Date: 07/30/2009 Start Qty: 1.00

Required Date: 08/07/2009 Req'd Qty: 1.00

Reference:

Approvals: Process Plan: *mf*

Date: 09-07-22 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D212-664-247

Rev A

100

0.00



DC

Document Control

DOCUMENT CONTROL

Memo

Photocopy bluefile and create labels as per PPP D212-664-207 CHG001

for CL 09/08/20

5 09/08/24

110

0.00



Packaging

Packaging

Packaging

Memo

0.00

↑ 6/24 2024

120

0.00



CNC Bend 2

CNC Alpha 160 Bender

BENDING MACHINE - CROSSTUBES

Memo

Bend tube as per Dwg D212-664-247 using CNC bender program and Folio FT

0.00

MB 09-08-12 (X)

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Work Order ID 50803

July 22, 2009 2:56:53 PM



Page 2

Item ID: D212-664-207

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Low Standard Aft

Start Date: 07/30/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 08/07/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

QC15- Crosstube Dimensional Check

0.00



QC

Memo

0.00

27 8 09/08/12

(X)

φ

Quality Control

140

Crosstubes

0.00



Crosstubes

Memo

0.00

1-Drill Rivet holes as per Dwg D212-664-247 using DT8972. 12-Drill pilot holes in tube as per Dwg D212-664-247 using DT8550 and DT8551. 13-Ream hole to finish size in tube as per Dwg D212-664-247. 14-Deburr & Inspect for surface damage. Repair damage within 1

①

11

9/8/13

Crosstubes

- Awm 9-8-13

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

Chemical Conversion Coat Tube & Cuffs

1

φ

-

Awm 9-8-13

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|--------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr. | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Work Order ID 50803

July 22, 2009 2:56:53 PM



Page 3

Item ID: D212-664-207

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Low Standard Aft

Start Date: 07/30/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 08/07/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

=> S 07/08/04

④

①

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

=> S 07/08/04

④

①

180

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038 Issue P/O: 10220 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order

CY 09/08/19 ①

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Work Order ID 50803

July 22, 2009 2:56:53 PM

Page 4

Item ID: D212-664-207

Accept

Setup Start

Revision ID: A

Stop

Item Name: Crosstube Low Standard Aft

Start Date: 07/30/2009 Start Qty: 1.00

Cust Item ID:

Required Date: 08/07/2009 Req'd Qty: 1.00

Customer:

Reference:

Run Start

Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

0.00



Packaging

Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

10/18/08

200

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Inspect for damage & ensure results are as per Dwg D412-664-203

08 19

210

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Rivet Cuffs as per Dwg D212-664-247. with Sika flex in Between tube & Cuff: 1A/R SIKAFLEX -241/-291 BATCH: 112391

08 18

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Work Order ID 50803

July 22, 2009 2:56:53 PM



Page 5

Item ID: D212-664-207

Accept



Setup Start



Revision ID: A

Stop



Item Name: Crosstube Low Standard Aft

Start Date: 07/30/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 08/07/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

220

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2 12-Paint outside
crosstube with White Imron as per QSI 005 4.2 ☐PRIME:☐Start
Time: 7:00 ☐Finish Time: 9:00 ☐PAINT:☐Start
Time: 3:00 ☐Finish Time: 4:15

IT 09-08-20

230

QC14- Inspect Spray Paint

0.00



QC

Memo

0.00

Quality Control

Wrap in plastic bag to protect from scratches

IT 09 08 21 (1)

240

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1- Assemble as per Dwg D212-664-247 12- Lightly scuff the bonded area using
a 320 grit sand paper and clean the area with 41058 wash 'n' wipe 13- Instal
support with magnobond 6398 per dwg D212-664-247, 14- Cure for 12hrs before
packaging. 15- Time & date of appli

IT 09-08-21

B111 249

exp 10 08 01

10:00

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Work Order ID 50803

July 22, 2009 2:56:53 PM

Page 6

Item ID: D212-664-207

Accept

Setup Start

Revision ID: A

Stop

Item Name: Crosstube Low Standard Aft

Start Date: 07/30/2009 Start Qty: 1.00

Cust Item ID:

Required Date: 08/07/2009 Req'd Qty: 1.00

Customer:









Reference:

Run Start

Approvals: Process Plan: Date: Tooling: Date:

Stop

QC: Date: SPC (Y/N): Date:

| Sequence ID/ Work Center ID | Operation Description | Set Up/ Run Hours | Draw Number | Draw Rev. | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
|--|---|-------------------------------|----------------|--------------|--------------|---|--|------------------|----------------|
| 250  QC Quality Control | QC5- Inspect part completeness to step on W/O Memo | 0.00 27 8 09/08/24 0.00 | | | |  |  | | |
| 260  QC Quality Control | QC4- 100% Inspect kits for completeness Memo | 0.00 27 8 09/08/24 0.00 | | | |  |  | | |
| 270  Packaging Packaging | Packaging Memo Identify and pack for shipping as per PPP D212-664-207 | 0.00 Rev A 0.00 | | 9/8/24 | |  | | | |

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Work Order ID 50803

July 22, 2009 2:56:53 PM



Page 7

Item ID: D212-664-207

Accept



Setup Start



Revision ID: A

Item Name: Crosstube Low Standard Aft

Stop



Start Date: 07/30/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 08/07/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/08/24 HJ

h 09-08-24

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

July 22, 2009 2:56:52 PM

Page 1/5

Work Order ID: 50803

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft

Start Date: 07/30/2009

Required Date: 08/07/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Remaining Qty To Pick | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| D3428-1RevA | | Manufactured | No | | | 100 | Each | 18.0000 | 1.0000 | | | |
| | | | | | | | | | | | | |
| Placard | | | | | | | | | | | | |

| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u> | | |
| Main Warehouse | | |
| ST | 18 | |
| 47310 | 8 | |
| 48359 | 10 | |

D212-664-207TRNRevA Manufactured No



Crosstube Turning Detail

D3660-1RevB Manufactured No



CUFF

| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u> | | |
| Main Warehouse | | |
| ST | 10 | |
| 44455 | 4 | |
| 46705 | 6 | |

9/8/24 (C)

48359 SL

B-50677

MB 09-08-11 (X1) ✓

MB

9/8/13

B 51162

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

July 22, 2009 2:56:52 PM

Work Order ID: 50803

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft


Comments:

Start Date: 07/30/2009

Required Date: 08/07/2009

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Remaining Qty To Pick | Qty Issued | Date Issued | Status |
|---|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| CR3212-4-06 | | Purchased | No | | | 240 | Each | 346.0000 | 44.0000 | | | |
|  | | | | | | | | | | | | |
| CHERRY RIVET | | | | | | | | | | | | |

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

107534

346

346

240

Each

74.0000

2.0000

D2940-1RevB

Manufactured

No



Support

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

74

24367

4

25594

2

41536

10

41870

20

45203

18

47748

20

M112314

ml 09 08 19

ST 09 08 21

x2

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

July 22, 2009 2:56:52 PM

Work Order ID: 50803

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft


Comments:

Start Date: 07/30/2009

Required Date: 08/07/2009

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Remaining Qty To Pick | Qty Issued | Date Issued | Status |
|--|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| D3595-063-530RevA | | Manufactured | No | | | 240 | Each | 162.0000 | 4.0000 | | | |
|  | | | | | | | | | | | | |
| RUBBER CUSHION | | | | | | | | | | | | |

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST 162
40780 2
44998 48
50030 112

RT 09-08-21

S

AN6-40A



Bolt

Purchased

No

260

Each

31.0000

4.0000



Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST 31
111424 31

112314 54

S

AN6-41A



Bolt

Purchased

No

260

Each

67.0000

2.0000



Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST 67
109371 17
111605 50

111605 9/8/24

July 22, 2009 2:56:52 PM

Shop Packet Print

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

July 22, 2009 2:56:52 PM

Page 4

Work Order ID: 50803

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft

Comments:

Start Date: 07/30/2009

Required Date: 08/07/2009

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Remaining Qty To Pick | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| AN960JD616 | | Purchased | No | | | 260 | Each | 398.0000 | 18.0000 | | | |



Washer

Warehouse Loc Qty Loc Code

Location

Main Warehouse

| | |
|--------|-----|
| ST | 398 |
| 107242 | 3 |
| 107959 | 6 |
| 109371 | 8 |
| 110704 | 23 |
| 111193 | 18 |
| 111607 | 340 |

112314. sd



Nut

Purchased

No

260

Each

779.0000

6.0000

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

| | |
|--------|-----|
| ST | 779 |
| 105077 | 22 |
| 110002 | 257 |
| 111548 | 100 |
| 111578 | 400 |

110002 9/8/24
SD

July 22, 2009 2:56:52 PM

Shop Packet Print

Page 4

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

Picklist Print

July 22, 2009 2:56:52 PM

Work Order ID: 50803

Parent Item: D212-664-207RevA

Parent Item Name: Crosstube Low Standard Aft

Comments:

Start Date: 07/30/2009

Required Date: 08/07/2009

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Remaining Qty To Pick | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| MS21920-28 | | Purchased | No | | | 260 | Each | 150.0000 | 4.0000 | | | |
| Clamp(per MIL-DTL-8783C) | | | | | | | | | | | | |

| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u> | | |
| OFFSHORE | | |
| FG | 5 | |
| 105884 | 5 | |
| Main Warehouse | | |
| ST | 145 | |
| 106864 | 5 | |
| 108466 | 9 | |
| 108847 | 7 | |
| 109181 | 14 | |
| 109965 | 10 | |
| 111281 | 50 | |
| 111734 | 50 | |

RT 09-08-21

xy

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

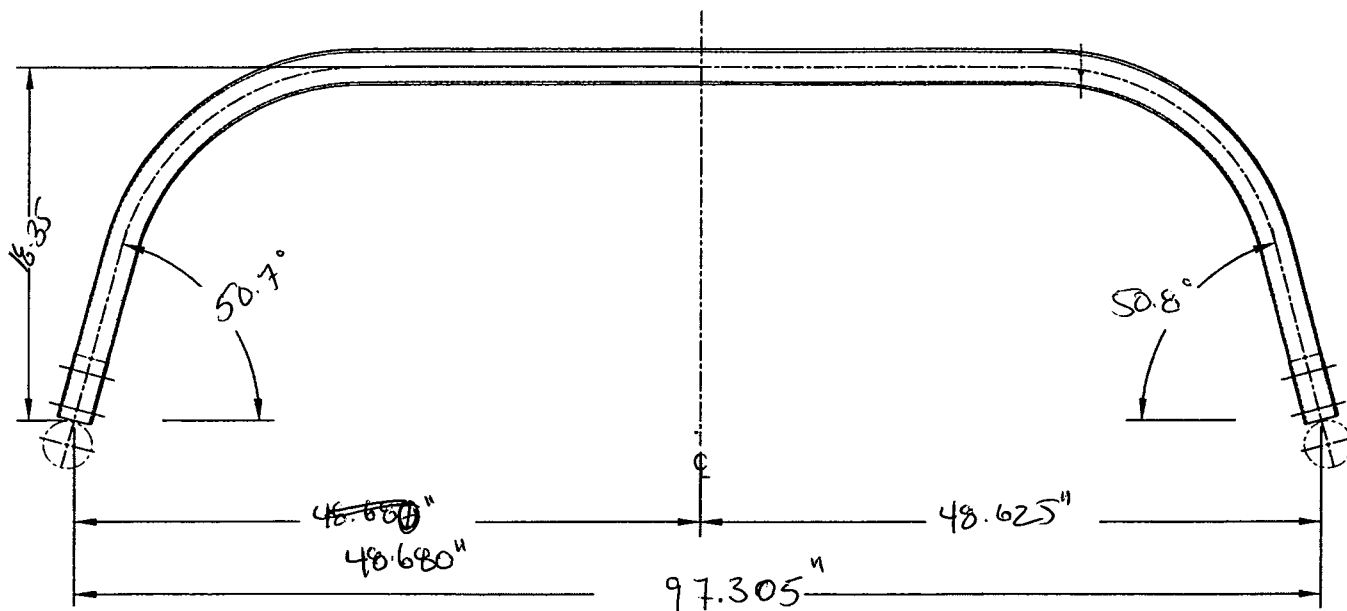
QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

| | | |
|---|--|----------------------------------|
| DART AEROSPACE LTD | | Work Order: 50803 |
| Description: Crosstube Low Aft (205/212) | | Part Number: D212-664-207 |
| Inspection Dwg: D212-664-247 Rev: A | | Page 1 of 1 |

| Required Dimension | Min | Max |
|--------------------|-------|-------|
| Height | 18.16 | 18.42 |
| 1/2 Span | 48.55 | 48.81 |
| Angle | 49 | 52 |
| Total Span | 97.1 | 97.62 |



| Comments |
|----------|
| |
| |
| |
| |
| |

| | |
|-----------------|----------|
| QC15 Inspection | S |
| Date | 09/08/12 |

| Rev | Date | Change | Revised by | Approved |
|-----|----------|-----------|------------|----------|
| A | 08.02.29 | New Issue | KJ/JM | |

Dart Aerospace Ltd

| W/O: | | WORK ORDER CHANGES | | | | | |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STEP | PROCEDURE CHANGE | By | Date | Qty | Approval Chief Eng / Prod Mgr | Approval QC Inspector |
| | | | | | | | |
| | | | | | | | |

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

| NCR: | | WORK ORDER NON-CONFORMANCE (NCR) | | | | | | |
|------|------|----------------------------------|-----------------------------|---------------------------------|----------------|---------------------------|-----------------------|--------------------------|
| DATE | STEP | Description of NC Section A | Corrective Action Section B | | | Verification Section C | Approval Chief Eng | Approval QC Inspector |
| | | | Initial Chief Eng | Action Description Chief Eng | Sign & Date | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

NOTE: Date & initial all entries

PARTS LIST:


| Qty | Part Number | Description |
|-----|-------------------|---|
| X | D212-664-247 | CROSSTUBE ASSEMBLY (205/212 LOW AFT) |
| 1 | D6008-132 | CROSSTUBE |
| 2 | D2940-1 | SUPPORT |
| 4 | D3595-063-530 | RUBBER CUSHION |
| 2 | D3660-1 | CUFF |
| 4 | MS21920-28 | CLAMP (OR MS21920-30) |
| 44 | CR3212-4-06 | RIVET (OR M7885/3-4-06) |
| A/R | MAGNOBOND 6398 | ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE) |
| A/R | SIKAFLEX-241/-291 | SEALANT (OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT) |

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6008-132
FINISHED LENGTH = 128.27±0.020 (BEFORE BENDING/TRIMMING)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) PART IS SYMMETRIC ABOUT CENTERLINE.
- 6) WHEN MACHINING TAPER, RUN-OFF PART AT STOCK. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 7) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D., EXCEPT UP TO 10% IS ALLOWED IN AREA NOTED.
- 8) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 9) SCRIBE DART PART NUMBER AND BATCH NUMBER ON INNER SURFACE OF TUBE WITH A VIBRATING STYLUS.
- 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 11) APPLY A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 TO THE SURFACE OF D2940-1 THAT WILL BE IN CONTACT WITH THE CROSSTUBE. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 12) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE D2940-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.
- 13) TORQUE CLAMPS 80 TO 100 IN.-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 14) INSTALL D3660-1 CUFF AFTER CHEMICAL CONVERSION COAT BUT BEFORE PAINT, WITH A LAYER OF SIKAFLEX-241/-291 OR PROSEAL 890 OR MIL-S-8802 CLASS B2 SEALANT BETWEEN CUFF AND CROSSTUBE. SEAL EDGE OF CUFF TO ENSURE NO GAPS.
- 15) TOUCH-UP HOLES WITH CHEMICAL CONVERSION COAT.

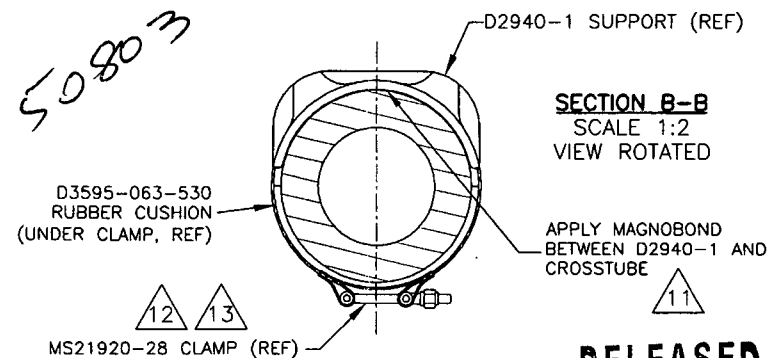
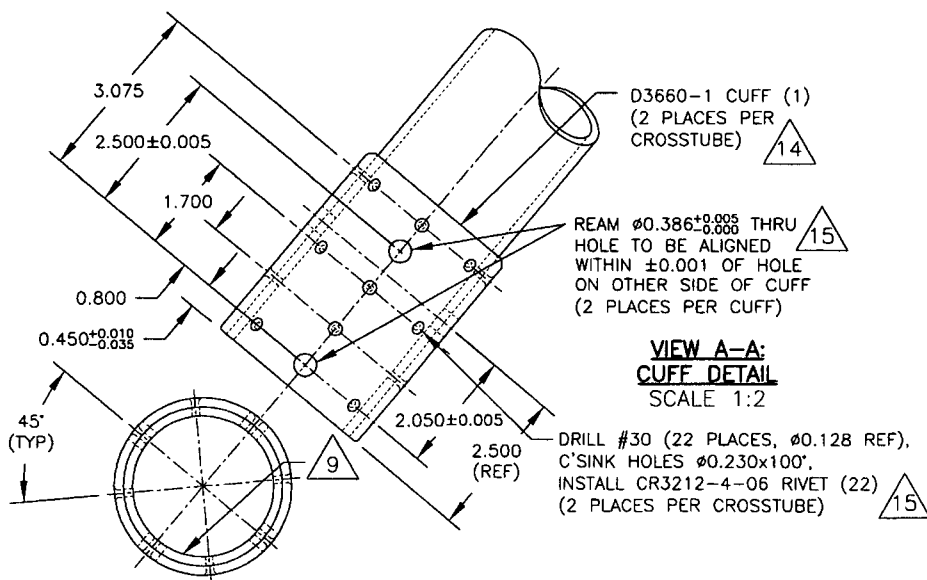
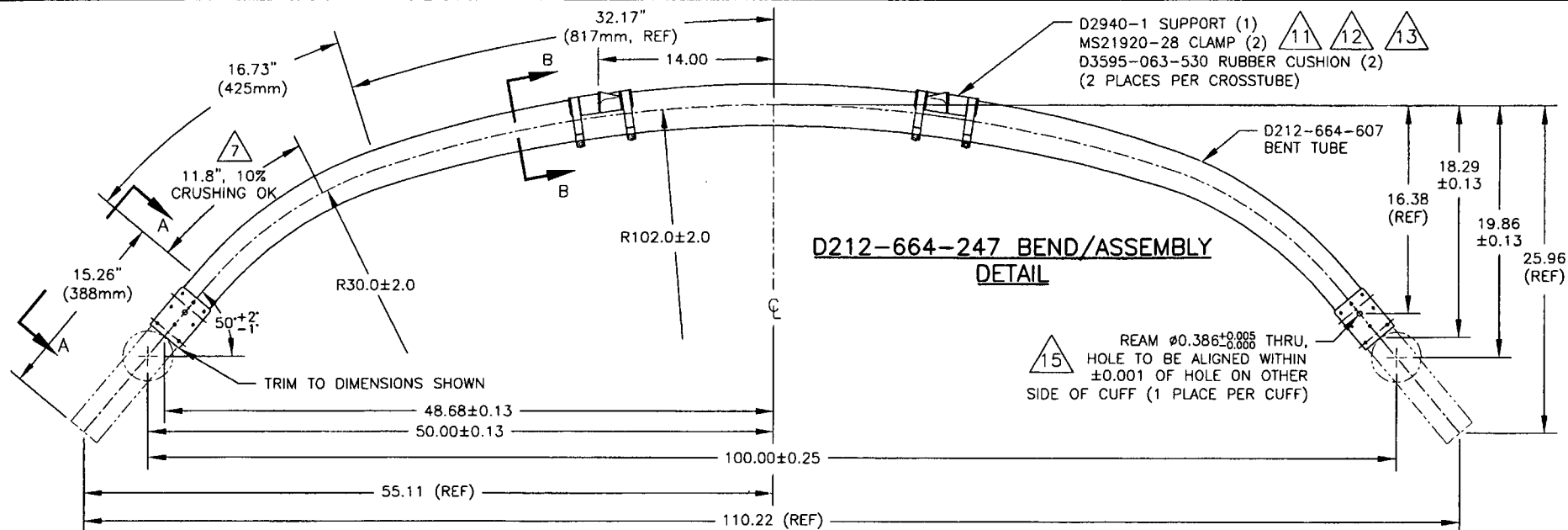
50803
#MF 09-07-20

DEO ATTACHED
RELEASED
010.14 #

| | | | |
|-------------------|--|--|--|
| A | | 07.07.07 | NEW ISSUE |
| DESIGN <i>qp</i> | | DRAWN BY <i>qp</i> |  DART AEROSPACE LTD. <small>WILKESBURY, ONTARIO, CANADA</small> |
| CHECKED <i>ph</i> | | APPROVED <i>ph</i> | |
| DATE 07.07.07 | | DRAWING NO. D212-664-247 TITLE CROSSTUBE (205/212 LOW AFT) SCALE NTS | |

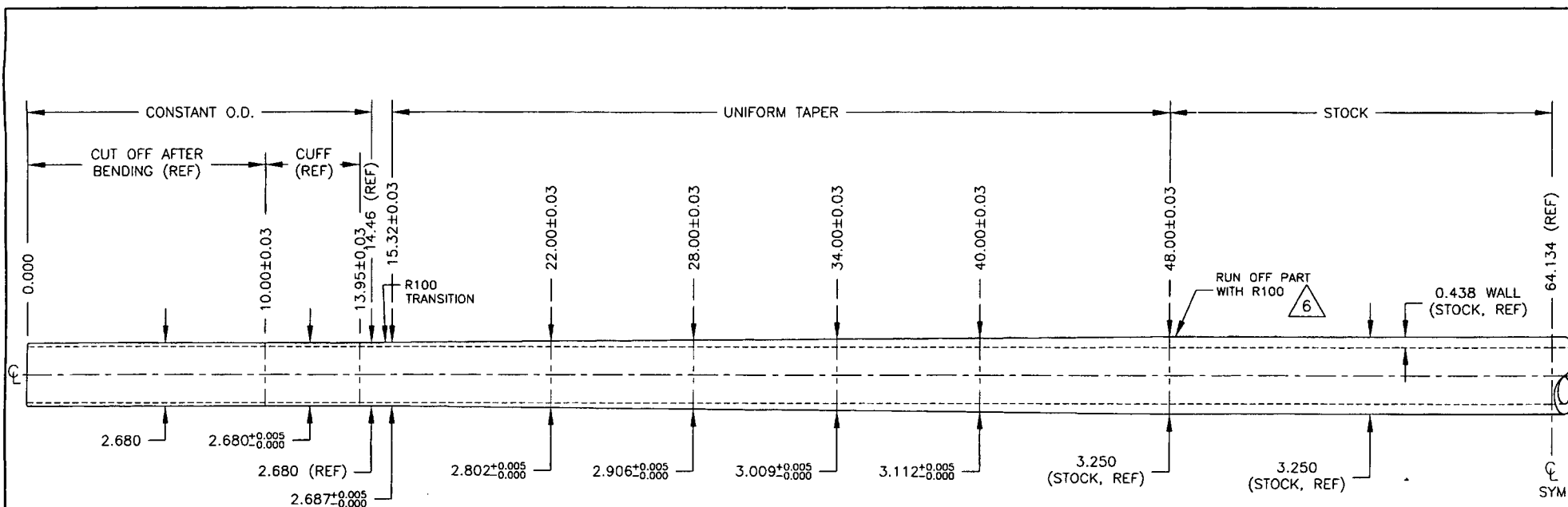
COPYRIGHT © 2007 BY DART AEROSPACE LTD.
 THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

REV. A
SHEET 1 OF 3



DEO ATTACHED RELEASED

| | | | | | |
|--|--|----------|----------|--|--------------|
| COPYRIGHT © 2007 BY DART AEROSPACE LTD. | | DESIGN | DRAWN BY | DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA | |
| THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. | | CHECKED | APPROVED | DRAWING NO. | REV. A |
| | | DATE | | D212-664-247 | SHEET 2 OF 3 |
| | | 07.07.07 | | TITLE | SCALE |
| | | | | CROSSTUBE (205/212 LOW AFT) | 1:8 |



D212-664-247 MACHINING DETAIL

50803

RELEASED
07.07.07
DEO ATTACHED

| | | | | | |
|--|--|----------|----------|-----------------------------|--|
| COPYRIGHT © 2007 BY DART AEROSPACE LTD. | | DESIGN | DRAWN BY | DART | DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA |
| THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. | | CHECKED | APPROVED | | |
| | | DATE | | DRAWING NO. | REV. A |
| | | 07.07.07 | | D212-664-247 | SHEET 3 OF 3 |
| | | | | TITLE | SCALE |
| | | | | CROSSTUBE (205/212 LOW AFT) | 1:4 |

| | | | | | | | |
|-----------------------------|----------------------|-------------------------|---|----------------------|--------------------------------|---------------------------|--------------|
| DRAWING NO. D212-664-247 | TITLE CROSSTUBE | REV. A | DART AEROSPACE LTD ENGINEERING ORDER | | D.E.O. NO. D212-664-247-A-1 | SHEET NO. SHEET 1 OF 1 | SCALE NTS |
| DRAWN <i>UP</i> | CHECKED <i>PR</i> | MFG. APPR. <i>AA</i> | APPROVED <i>AMP</i> | DE APPR. <i>#</i> | | | |
| DATE 09.05.01 | DATE 09.06.15 | DATE 09/06/22 | DATE 09/06/22 | DATE 09.06.22 | | | |

CHANGE:

ADD THE FOLLOWING CROSSTUBE ASSEMBLY:

| Part Number | Description |
|---------------|----------------------------------|
| D212-664-247B | CROSSTUBE ASSEMBLY (214 LOW AFT) |

THE D212-664-247B CROSSTUBE HAS THE SAME PARTS LIST AS THE D212-664-247 CROSSTUBE. HOWEVER, INSTALL THE SUPPORTS AS SHOWN IN FIGURE 1 OF THIS ENGINEERING ORDER. THE NEW KIT IS OTHERWISE ASSEMBLED PER THE D212-664-247 CROSSTUBE.

RELEASED
09/06/22

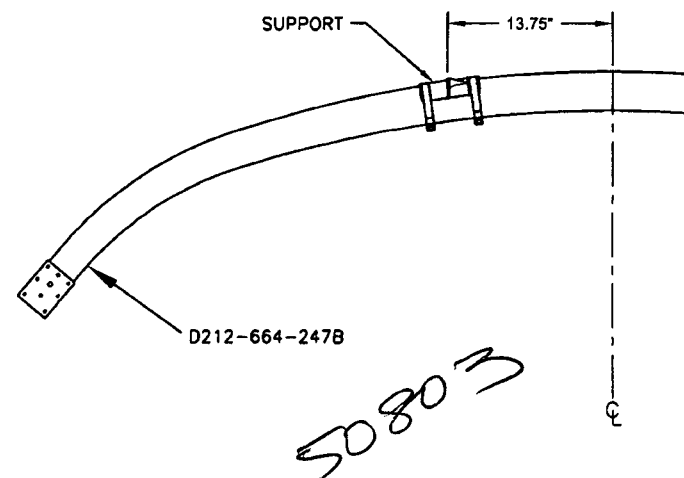


FIGURE 1 - SUPPORT INSTALLATION

00

5.2 STANDARD GEAR CROSSTUBES

| Item | -107 | -207 | -209 | Part Number | Description |
|------|------|------|------|------------------|--|
| | X | | | D212-664-107 | CROSSTUBE INSTALLATION, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K STANDARD FWD |
| | | X | | D212-664-207 | CROSSTUBE INSTALLATION, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K STANDARD AFT |
| | | | X | D412-664-209 | CROSSTUBE INSTALLATION, 412 STANDARD AFT |
| 6 | 1 | | | D212-664-147 | CROSSTUBE ASSEMBLY, 204/205/210/212/214/412, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K STANDARD FWD |
| 7 | | 1 | | D212-664-247 | CROSSTUBE ASSEMBLY, 204/205/210/212/214, UH-1H, UH-1A/B/E/F/L/P, TH-1F/L, HH-1K STANDARD AFT |
| 8 | | | 1 | D412-664-249 | CROSSTUBE ASSEMBLY, 412 STANDARD AFT |
| 10 | 2 | | | * D2893-1 | SUPPORT |
| 11 | 4 | | | * D3595-063-450 | RUBBER CUSHION |
| 12 | 4 | | | * MS21920-25 | CLAMP (OR MS21042-26) |
| 13 | 4 | | | AN6-35A | BOLT |
| 14 | 4 | | | AN6-36A | BOLT |
| 15 | 6 | | | MS21042L6 | NUT (OR MS21042-6) |
| 16 | 18 | | | AN960JD616 | WASHER |
| 20 | | 2 | | * D2940-1 | SUPPORT |
| 21 | | 4 | | * D3595-063-530 | RUBBER CUSHION |
| 22 | | 4 | | * MS21920-28 | CLAMP (OR MS21042-30) |
| 23 | | 4 | | AN6-40A | BOLT |
| 24 | | 2 | | AN6-41A | BOLT |
| 25 | | 6 | | MS21042L6 | NUT (OR MS21042-6) |
| 26 | | 18 | | AN960JD616 | WASHER |
| 30 | | | 1 | * D2896-1 | SUPPORT |
| 31 | | | 2 | * D2856-600-1009 | ABRASION STRIP |
| 32 | | | 2 | * D3595-063-570 | RUBBER CUSHION |
| 33 | | | 4 | * MS21920-28 | CLAMP |
| 34 | | | 2 | * MS21920-30 | CLAMP (OR MS21042-32) |
| 35 | | | 4 | AN6-40A | BOLT |
| 36 | | | 2 | AN6-41A | BOLT |
| 37 | | | 6 | MS21042L6 | NUT (OR MS21042-6) |
| 38 | | | 18 | AN960JD616 | WASHER |
| 39 | | | 2 | * D3189-1 | CHAFING SHIELD |
| 45 | 2 | | | * D3659-1 | CUFF |
| 46 | | 2 | 2 | * D3660-1 | CUFF |
| 47 | 44 | 44 | | * CR3212-4-06 | RIVET (M7885/3-4-06) |
| 48 | | | 44 | * CR3212-4-07 | RIVET (M7885/3-4-07) |
| 50 | 1 | 1 | | D3428-1 | PLACARD |

*REFERENCE ONLY. PARTS ARE INCLUDED IN D212-664-147/-247 OR D412-664-249 ASSEMBLIES ABOVE
NOTE: KITS INCLUDE EXTRA HARDWARE FOR COMPATIBILITY WITH BOTH DART AND BELL/AA
SKIDTUBES.

• COPYRIGHT © 2001 BY DART AEROSPACE LTD •
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED
OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

Revision: F
Date: 08.09.05

50803

